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WAR MACHINE

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Armed Forces of the World: Soviet Army (Part 1)

Into the Unknown

Battle of the Frontiers

Mons – the Making of a Legend

A fully illustrated guide to Rifles of the Great War

WAR MACHINE

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Rifles of the Great War

The introduction of the magazine-loading rifle gave the infantryman more firepower than ever before, but the appearance of quick-fire artillery and machine-guns combined to produce a bloody stalemate.

Serbian soldiers are seen in April 1916, with the man laden with trophies in the foreground carrying his 7-mm (0.275-in) rifle carefully wrapped against the mud. Part of his booty is a Mannlicher-Carcano carbine. Elaborate decoration of rifles was a Balkan tradition dating back to the 16th century.

The years from 1914 to 1918 were very much a period of purgatory for the ordinary foot soldier. He was confined to a miserable life of trench warfare interspersed by periods when attacks were made through barbed wire in the face of massed machine-gun fire. The artillery ruled his existence and his military skills were few.

But every one of the unfortunates who led this odd life had one thing in common. He was equipped with a standard service rifle which was supposed to be his main weapon. In the event the individuals rarely got the chance to use these weapons, apart from the frantic and frenzied periods when an infantry attack actually reached the enemy's trenches. There the rifle's bayonet could be more useful than its bullet, and if all else failed the rifle became a very effective club. This close-quarter warfare was far from what the rifle designers had envisaged, namely accurate fire at long ranges. What the soldiers wanted was something that worked when required, very often at close ranges, and it was this fact that differentiated the true service rifle of World War I from the target rifles their designers thought they wanted. Under trench conditions the rifles that were able to withstand the rough-and-tumble of service life were much more favoured than the designers' dreams. Thus rifles such as the German Gewehr 98 and the British No. 1 Mk III fared much better than refined products such as the Canadian Ross or the British/American No. 3 Mk I.

The Western Front was not the only battleground of World War I. Elsewhere the Austro-Hungarians and Italians fought it out with Mannlicher modello 1895s and Mannlicher-Carcano modello 1891s. The Russians carried what Mosin-Nagant Model 1891s they could produce through the long series of campaigns against the Germans and Austro-Hungarians, while the French had a variety of weapons, some of them with colonial-warfare origins. Nearly all of these rifles used some form of magazine in which extra rounds could be carried ready to fire, and all of them carried long and wicked bayonets that reduced the rifle to little more than a long-range pike as carried in warfare for hundreds of years.

Nearly all the major types of rifle used by both sides in World War I are mentioned in this study. The men that carried them have now nearly all passed away, all of them remembering every last detail and feel of the weapons that they very often carried to their deaths. They are now part of history, but a surprising number of these rifles survive, not all of them in museums, for many are now collected by enthusiasts who treasure their design and robust construction. If they can fire them the enthusiasts are often agreeably surprised by the high degree of accuracy many are still capable of producing.

The disparity between the length of the Lebel mle 1886/93 in the foreground and the No. 1 Mark III held by the British soldier can be readily appreciated here. The Lebel was typical of most World War I rifle lengths, while the much shorter No. 1 Mark III was far easier to carry and use in action.

GERMANY

Mauser Gewehr 1898

The first Mauser rifle approved for German army service was the **Mauser Modell 1888**. This used a Mauser bolt action that has remained virtually unaltered to this day, but with it a rather dated 8-mm (0.315-in) cartridge. Trials led to the adoption of a new 7.92-mm (0.312-in) cartridge, and a new rifle to fire it became known as the **Gewehr 1898** or **Gew 98** (Rifle Model 1898). This new rifle was destined to be one of the most widely used and successful weapons of its type, and it was produced in large numbers. Many later rifles could trace their origins back to the Gewehr 1898. It was the classic Mauser rifle, handsome and rather long, but well-balanced and with everything excellently designed and in general nicely made. The term 'in general' is used advisedly, for once World War I was into its stride the standards of manufacture had to be relaxed and some comparatively rough specimens were issued to the troops. But most were very well-made with good quality wooden furniture that was emphasized by the use of a pistol-type grip behind the trigger to assist holding and aiming. The original rear-sight was a very elaborate affair with sliding ramps and other niceties that needed experience for effective use, but some larger versions were simpler. The bolt action retained the usual Mauser front-lug locking systems, with the addition of an extra lug to make the number up to three for added safety with the new and more powerful cartridge. The bolt used a straight-pull action which was and still is rather awkward to use quickly and smoothly but in service generated few problems. The integral box magazine held five rounds loaded from a charger clip.

While the Gewehr 1898 was produced primarily for the German armed forces, it was also the starting point for a multitude of rifle designs that spread all over the world. Spain was an early user of the basic Mauser action and versions produced there differed little from the Gewehr 1898. The output of Mauser models from Germany and Spain were soon encountered all over the world in nations as far apart as China and Costa Rica. The Mauser action accrued an enviable reputation for reliability, strength and accuracy, and the arguments rage even today as to whether or not the Gewehr 1898 and its various cousins were the finest service rifles of their time. Many still state that they were but there are many other contenders to the title. What is certain is that during the years 1914 to 1918 the Gewehr 1898 served the German army well. The front-line soldiers had to take care of them but usually this extended no further than keeping the bolt area covered with a cloth at all times when the rifle was not in use. Some versions such as sniper rifles appeared with special sights, including various forms of optical sight, and the weapon still has the claim to fame that it was one of the very first, if not the first, anti-tank weapon. This came about by the chance discovery that the armour of the first British tanks could be penetrated by the simple expedient of reversing the bullets used in the Gewehr 1898 before they were fired: the blunt end simply punched a hole through the armour before the bullet could warp.

Above: Not all the time spent out of the trenches was passed in rest. Here three 'Frontschwein' are engaged in rifle practice with their Gewehr 1898s.

Left: Years of trench warfare radically altered the appearance of the German soldier. Carrying the Gewehr 1898K, he wears the distinctive 'coal scuttle' helmet. Note the wirecutters tucked into the belt.

The standing figure watches the target and shouts out the score to be marked down by the seated soldier on the right. The date is May 1917.

Specification

Mauser Gewehr 1898
Calibre: 7.92 mm (0.312 in)
Length: overall 1.25 m (49.2 in); barrel 0.74 m (29.1 in)
Weight: 4.2 kg (9.26 lb)
Muzzle velocity: 640 m (2,100 ft) per second
Magazine: 5-round integral box

The German army's Gewehr 1898 was one of the more important Mauser rifles, as it was the standard German service rifle of World War I. It was very well made with a strong bolt action, and fired a 7.92-mm (0.312-in) round using a five-round magazine. It served as the model for many later rifles.

CANADA

Ross Rifles

The first Ross rifle appeared during 1896 and was produced, like the later models, at Sir Charles Ross's own arms factory in Quebec, Canada. Ross was a keen marksman of the old 'Bisley School', and longed for what he considered to be the ideal service rifle: one that would consistently provide accuracy. In pursuit of this ideal he concentrated on items such as barrels and sighting systems as opposed to the more mundane aspects of design that are essential to the true service rifle. Thus although his products were superb target weapons, they revealed themselves to be less than ideal under the rough-and-tumble of service conditions.

The number of types of Ross rifle runs to well over a dozen. Many of the types produced were often minor modifications of the preceding model and to list them all would be unhelpful. The main service model was known to the Canadian army as the **Rifle, Ross, Mk 3** and may be taken as typical. It was a long-barrelled rifle to provide accurate long-rifle fire, and used an unusual straight-pull bolt system allied to a box magazine holding five rounds. In common with other Commonwealth armies of the day the Canadian army adopted the British 0.303-in (7.7-mm) cartridge, and this led to the British army taking numbers of Ross rifles in 1914-5.

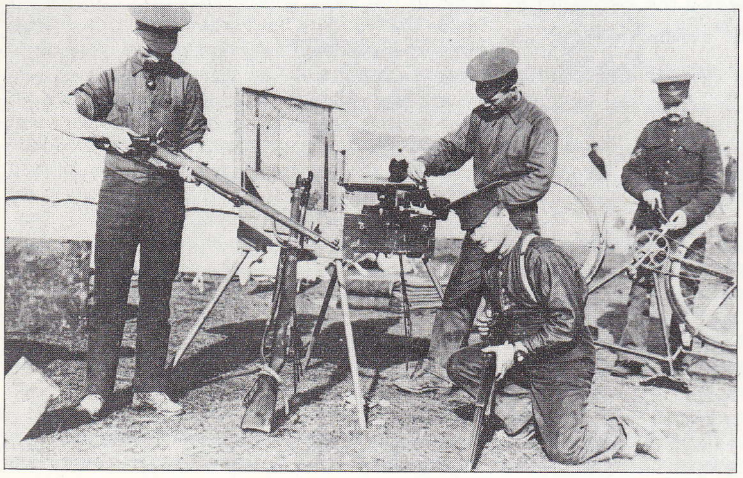
The Canadian army adopted the Ross after about 1905, and the first Canadian troops to travel to France in 1914 were equipped with them. It was not long before the Ross rifles were found wanting once they encountered the mud of the Western Front trenches, for their bolt actions clogged with remarkable ease once even small amount of debris had entered the system. In his search for accuracy Ross had overlooked that service rifles need to be tolerant of rough conditions, and the Ross rifle required dedicated maintenance and care in handling. The bolt action frequently jam-

med and the resultant clearing revealed another nasty drawback to the design: the bolt had to be put together in a very precise manner, and if it was re-assembled in the wrong way after cleaning or repair it could still fire the rifle even though the locking lugs that held its bolt in place were not engaged. As the Ross used a straight-pull bolt the part could fly back and hit the firer in the face. Thus the Ross soon fell from grace and was replaced by the British No. 1 Mk III. Quite apart from the bolt problems, the length of the Ross rifle was too great for ease of use in the trenches.

The Ross was not completely withdrawn from service use. Fitted with a telescopic sight it was used very successfully as a sniping rifle, a role in which its accuracy was most prized. Trained snipers could also provide the weapon with the extra care it required. To this day the Ross is still a much-prized target rifle. Many were used during World War II by various British second-line units, including the Home Guard, but the Ross never overcame the reputation for problems that it gained during its introduction to the trenches during 1914 and 1915.

Specification
Rifle, Ross, Mk 3
Calibre: 7.7 mm (0.303 in)
Length: overall 1.285 m (50.6 in); barrel 0.765 m (30.15 in)
Weight: 4.48 kg (9.875 lb)
Muzzle velocity: 792 m (2,600 ft) per second
Magazine: 5-round box

The Canadian Ross rifle (this is a Mk 2) was an excellent target rifle, but less successful in service, as mud and dirt tended to clog the straight-pull bolt action. Although used in France, the Canadians later exchanged it for the No. 1 Mk III, and the Ross rifles were used for training.



Canadian armourers maintain their Ross rifles on Salisbury Plain in September 1914. The armourers had the job of maintaining bicycles as well as guns. When well maintained, the Ross was a formidably accurate rifle and remained a prized sniper's weapon.

After the Ross rifle was withdrawn, some were used for training and some were issued to British armed trawler crews to provide them with some form of defence against German aircraft or even U-boats operating in the North Sea; they were better than nothing.

UK

Rifle No. 3 Mk I

Despite their eventual success, when first introduced the No. 1 Mk III rifles were deemed to lack the features required by some military pundits. In case the new SMLE did not meet requirements a 'back-up' design was put forward, one chambered for a new 7-mm (0.276-in) cartridge and employing a Mauser bolt action. Being only a back-up design at first, this rifle did not appear until 1913 under the general title **P.13**. At the time the design was taken no further and work on the new 7-mm cartridge ceased. Thus things were in abeyance just as the war began in 1914, and by then the P.13 had become the **P.14**.

In 1915 the overall shortage of rifles for the expanding British and Commonwealth armies was such that at one point rifles were being ordered from places as far away as Japan. It was accordingly decided that the P.14 could be ordered from the United States, but chambered for the standard 7.7-mm (0.303-in) cartridge. Several firms, including Winchester and Remington, became involved in production of the P.14, which was known to the British army as the **Rifle No. 3 Mk I**, and the results were shipped eastwards across the Atlantic.

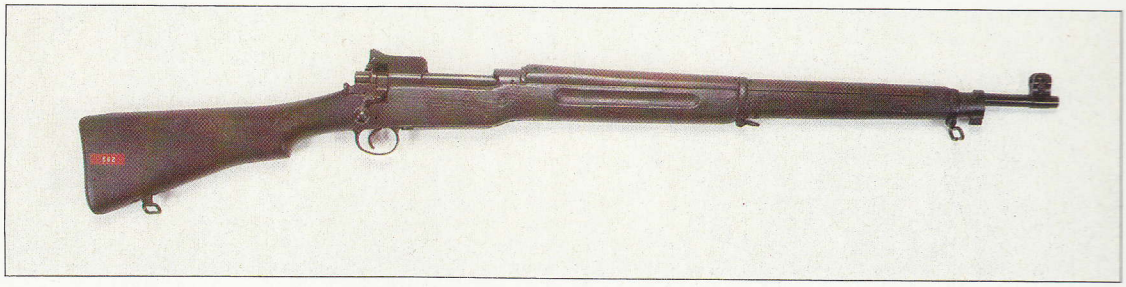
When they arrived they were hurriedly issued and rushed into combat. They did not fare very well, for the No. 3 rifle was a product of what became known as the Bisley School of rifle thought. To the Bisley School long-range accuracy was the touchstone of all combat rifle worth. Soldiers were expected to hit man-sized targets at ranges of over 914 m (1,000 yards), and if a rifle could not attain these standards it was reviled. It was exactly this factor that drew so much criticism to the SMLE when it was first issued in 1907, for the SMLE was never a perfect target rifle. With the No. 3 the Bisley School had been given full rein and the result was not unlike the ill-fated Canadian Ross rifles. The No. 3 was quite simply not a good service rifle: it was long and awkward to use under combat conditions, encumbered by a long bayonet it was ill balanced and even less handy, and the bolt action took considerable maintenance. It was withdrawn from service when enough No. 1 Mk IIIs were to hand.

The No. 3 Mk I did have one saving grace; it was as accurate as the Bisley School had intended. Thus the No. 3 was used mainly for the sniping role, in which it was very successful.

The No. 3 Mk I had one more task to perform in World War I, and that came when the Americans entered the war in 1917. They were even more desperate for service rifles than the British and as the production lines were still producing No. 3s for the British they were changed to manufacture the same rifles chambered for the American 7.62-mm (0.3-in) cartridge. Thus the No. 3 became the **M1917**, known to most Americans to this day as the **'Enfield'**. In American hands the M1917 (or **P.17** to some) fared no better than it had with the British, and in 1919 the entire output was placed into store, only to be dragged out again in 1940 and sold to the United Kingdom to arm the new Home Guard.

Specification
Rifle No. 3 Mk I
Calibre: 7.7 mm (0.303 in)
Length: overall 1.175 m (46.25 in); barrel 0.66 m (26 in)
Weight: 4.35 kg (9.6 lb)
Muzzle velocity: 762 m (2,500 ft) per second
Magazine: 5-round box

The P.14 was a Mauser rifle produced in case the No. 1 Mk III failed to come up to specification. A 0.303-in (7.7-mm) version was ordered from the USA, and this was later adopted by the US Army as the Model 1917. It was an excellent and accurate weapon.



Mons-the Making of a Legend

Before the war, the tiny size of the British Army was a source of amusement to our enemies and anxiety to our allies. But when the German armies swept through Belgium in 1914, it fell to the British Expeditionary Force to stem the flood. Every man a volunteer, the BEF dug itself in around the little town of Mons and awaited the German onslaught.

At the outbreak of World War I, two gigantic military plans were put into action: Plan 17 by the French armies under command of General Joffre, and the Schlieffen Plan by the Germans under the slightly hesitant command of the younger General von Moltke.

Plan 17 collapsed almost immediately, the élan and 'Spirit of the Offensive' of the French troops upon which it was to such a great extent based proving ineffective in the face of the realities of rifle and machine-gun fire, plus the refusal of the German commanders to act in strategic accordance with French pre-conceptions. Instead of driving forward into the gigantic trap set by the French in the Trouée des Charmes, between Nancy and Belfort, the Germans swung huge armies in a wide arc along the traditional military routes through the Low Countries, in an endeavour to outflank their main enemy and eventually entrap the hostile armies against their own frontier defences.

However uncertain von Moltke's grasp might eventually prove to be, during those opening weeks of the war all movements were strictly controlled by the firm precepts laid down years before by his predecessor in office, the omnipotent Graf von Schlieffen. Those precepts dictated not only the overall pattern of movement, but also the distribution of forces necessary to carry it out; Schlieffen's dying words had been 'Make the right wing strong!' and so, despite von Moltke's doubts, the German 1st Army (under the coldly efficient General von Kluck) smashed forward like a gigantic hammerhead through Belgium and northern France, the 2nd, 3rd and 4th Armies to its left acting as the shaft, the whole weapon pivoting on the French fortress of Verdun.

So during those long, hot August days of 1914 it appeared to the eyes of an astonished world that the battle was indeed progressing in accordance with the plans of the deceased von Schlieffen. The huge fortress of Liège fell within the first few days, its supposedly impenetrable steel cupolas shattered by the plunging fire of huge siege weapons, the largest and heaviest guns so far used in warfare, the garrisons dazed and disoriented by shock and deafened by explosion. To the south the battles of the frontier were being fought and won by armies under Crown Prince Wilhelm and the Duke of Würtemberg, and once Liège had fallen General von Bülow's 2nd and General von Hausen's 3rd Armies drove on down the Meuse, taking Huy, Namur and Dinant, pressing back the French armies along the whole length of the assault, disrupting the desperate attempt of the French 5th Army under General Lanrezac to drive northwards and block or at least cut off von Kluck's implacable advance.

For it was the German 1st Army which was making the most spectacular and impressive gains. To this army had fallen first Louvain and then Brussels itself, and by the end of 18 days' campaigning the 200,000 men and 40,000 horses had advanced 160 km (99 miles), dragging their thousand-odd pieces of artillery and other military impedimenta with them. They marched all the way, fighting quite a lot of it through countryside peopled sometimes by actively hostile troops, mostly by sullenly hostile civilians and on occasion by groups of insidious treacherous *francs tireurs*, despite the immediate and severe punishment meted out

The superbly disciplined troops of the BEF were trained to fire 15 aimed rounds per minute, and when the Germans attacked, their close formations were swept away in a hail of bullets. Many Germans were convinced that they were facing a line of machine-guns.

on the spot to them and their associates when caught.

But success and the sense of victory were enough to sweep away all doubt and fear, to revivify tired muscles and aching bones; the 1st Army consisted, after all, of young soldiers, well-trained and hardened in willing service to the Fatherland, and on the morning of 23 August they were further heartened by the repetition of an old joke which made its way along the columns. There had been rumours for the last 24 hours that there were British troops (possible the whole British army) in front of them, and von Kluck was said to have repeated Bismarck's remark made so many years before: the German soldiers need not concern themselves with the English, for he was sending the police to arrest them!

The British army was, of course, a joke. German comic papers had long portrayed its soldiers as figures of fun in their short scarlet tunics with small caps set at an angle on their heads or with bearskins with the chin-straps under their lip, and the first sight of them on that fateful morning did little to dispel the impression. Hauptmann Walter Bloem, commandng a fusilier company of the 12th Brandenburger Grenadiers, was approaching a group of farm buildings on the outskirts of Tertre, just north of the canal which runs from Condé sur l'Escaut eastwards to the small town of Mons, when he turned a corner and saw in front of him a group of fine-looking horses, all saddled up.

He had hardly given orders for their capture when 'a man appeared not five paces away from behind the horses – a man in a grey-brown uniform, no, in a grey-brown golfing-suit with a flat-topped cloth cap. Could this be a soldier?'

Surely not!

But it was. It was an officer from A Squadron, 19th Hussars, the cavalry regiment attached to the 5th Division of the British Expeditionary Force (BEF), and behind this reconnaissance patrol on the far side of the 20-m (66-ft) wide canal, waited the infantry of one of the 5th Division's brigades, the 14th. Other brigades flanked this on either side: on the west to just past Conde sur l'Escaut, and on the east to the Mons salient, where they linked with the left-hand brigade of the 3rd Division, these two divisions comprising the British II Corps under command of General Sir Horace Smith-Dorrien. The divisions of I Corps under General Sir Douglas Haig then continued the line eastwards towards the left flank of Lanrezac's army.

The British advance

The British Expeditionary Force of two infantry corps and a cavalry division under Major-General Sir Edmund Allenby had begun embarkation from Dublin and Southampton on 12 August, crossed the Channel that night, spent a few days in tented reception camps near Boulogne, Le Havre and Rouen, travelled by train as far as Le Cateau and then spent the next five days marching into Belgium along rough pavé roads and in sweltering temperatures. It was a journey which had at first exacted a price in blistered feet and sweating exhaustion (especially among the newly-recalled reservists) but which by the previous evening (22 August) had brought them to a satisfactory state of physical and morale fitness. The Londoners, Scots, Irish and Welsh; the men from Surrey, Suffolk, Lincolnshire, Wiltshire, Kent, Cornwall and South Staffordshire; the Guardsmen, the Fusiliers, the privates and troopers, the NCOs and officers were now fit and relaxed, settled into their allocated positions, some dug in along the flank or around the Mons salient, most of them lying easily behind the bank of the canal or hidden in the barns and outhouses close to the 16 bridges that crossed it, their Lee-Enfield rifles, their Vickers machine-guns (two per battalion) and their Webley revolvers all cleaned, checked and to hand.

And they waited for what 23 August would bring.

It brought at first in the early morning the sights of ordinary small-town and village life continuing unconcernedly among the narrow streets and lanes, between the numberless slag heaps and pit heads of this small coal-mining community. Church bells rang, sombre-coated villagers responded to their summons, a small train filled with holiday-makers chuffed away towards the coast, the scent of newly-ground coffee was everywhere; and the sudden explosion of a shell in the outskirts of Mons itself, among the Royal Fusiliers, was so unexpected that the whole world seemed to hold its breath in astonishment.

If the Allied armies were to extricate themselves from the German trap, the BEF had to hold off von Kluck's First Army for at least 24 hours. The Germans along the British front were soon pinned down by withering rifle fire, but it was not long before they began to work their way around the flanks of the BEF's position.

Two British infantrymen carrying full packs probe forward along a Belgian hedgerow. When the German cavalry patrols discovered the British position they were driven off by rapid and accurate rifle fire. Before long the British outposts fell back to the main position as the German attack began.

But not for long. As the sound and smoke died away, the rifles came up and the appearance of a German cavalry patrol opposite caught no one unawares except themselves: the first volley of the Fusiliers emptied all their saddles, and very shortly afterwards Oberleutnant von Arnim of the Death's Head Hussars was brought in swearing profusely with a smashed knee.

By now the whole of the British line was alert and waiting, though hardly for what next happened. Before their astonished eyes, the woods, hedges and buildings stretching before them 1.6 km (1 mile) away across the canal and the flat water-meadows beyond, began erupting solid columns of grey-uniformed men, moving unhurriedly towards them in a solid mass like a football crowd after a match.

Watching the grey ocean lapping across the fields, one British officer asked another to pinch him in case he was dreaming, and his wonder was palpable as along 26 km (16 miles) of dead straight canal the British infantry waited while thousands of men walked with apparent innocence and unconcern towards almost certain death. At least 12,000 Lee-Enfield rifles, each held by a soldier expert in the famous British 'rapid fire', waited behind the embankment of the canal, augmented by 24 Vickers machine-guns; and it would seem that hardly one of them was fired until the German front ranks had come within 550 m (600 yards), the range over which the Lee-Enfield fired a flat trajectory.

When fire was opened, the slaughter was immediate – and horrific.

Within minutes whole German battalions were wiped out, junior officers found themselves the only officers left to a regiment bereft

Elements of the Indian Army soon joined the BEF, and the 129th Baluchis, seen here at Wytschaete in October 1914, were some of the most experienced soldiers in the theatre. Indian troops later provided the bulk of British Imperial Forces fighting the Turks in Mesopotamia.

of all warrant or non-commissioned ranks and the majority of the men. Walter Bloem and his company were immediately pinned down in a water-meadow and decimated, the survivors held where they had dropped for the rest of the day, only saved from much higher casualties by the fact that they had managed a concerted rush to the canal bank and lay in its shelter with rifle and machine-gun bullets stitching the air just above them. Such was the rate and volume of fire that swept the battlefield from one end to the other that Bloem and those of his contemporaries who survived remained convinced to the end of their days that each British battalion had at least 12 and probably 24 machine-guns apiece.

But there were only 24 machine-guns to a brigade, and only 7,500 men in the BEF altogether – and that number, however well-trained, cannot hold up 200,000 men indefinitely except in circumstances of severe geographic confinement which did not apply at Mons. Inevitably, small groups of Germans reached the bridges over the canal, in one case near Jemappes by driving in front of them a party of little Belgian schoolgirls; it was a ploy which so disconcerted the Northumberland Fusiliers opposite that they lost control of important lock gates and were thus eventually forced out of their position.

German artillery brought up during the late morning blew gaps in the British line, and the Royal Fusiliers and the 4th Middlesex holding the sides of the narrow Mons salient were in an especially dangerous situation once the guns registered on the town. And all the while, more of von Kluck's battalions were flooding down the roads leading to the battle, widening the front until it overlapped the British line and threatened the flanks.

By 16.00, II Corps was being forced back, the rearguards and engineers blowing the bridges as they pulled out (two VCs and a DCM were won in the process) and then later in the evening the true seriousness of the British position was revealed. On their right the French 5th Army had had another disastrous day, Lanrezac had taken fright and ordered a large-scale retirement without, however, informing his allies, despite promises to Sir John French of close liaison.

By 21.00 it was evident that the British had been left on their own, and despite justifiable feelings of confidence throughout all ranks in their ability to beat the enemy, they must now retreat. During that night the tired, frustrated and puzzled men of the BEF began the march back which would end on the Marne.

But they had fought the Battle of Mons, and it would live in history for all time. And they left behind them a confused and depressed enemy. That night Walter Bloem wrote in his diary '. . . the men all chilled to the bone, almost too exhausted to move and with the depressing consciousness of defeat weighing heavily upon them. A bad defeat, there can be no gainsaying it . . . we had been badly beaten, and by the English – by the English we had so laughed at a few hours before.'

The combination of British infantry training and the SMLE had shot them flat.

Royal Marines in Broderick caps carry No. 1 Mk IIIs during the campaign of open fighting that took place near Ostend in August 1914. They are men of the Royal Marine Light Infantry, who were used to defend the port facilities at Ostend but were later withdrawn from the area.

After Mons the German army pressed on into France, where their great offensive was finally halted on the Marne. German infantry from a Bavarian regiment lie in an extended line that would have been impossible a few months later when the armies had all moved to underground shelter and trenches.

UK

Rifle No. 1 Mks III and III*

During the late 19th century the British army adopted the magazine and bolt system developed by the American engineer James Lee, and through a long process of 'in-house' improvements and trials this led to a series of what were known as Lee-Enfield rifles, the Enfield part of the name coming from the Royal Small Arms Factory at Enfield Lock, Middlesex. This series led in 1907 to a new design known as the **Short Magazine Lee-Enfield (SMLE)**, a rifle with a length between those of a normal rifle and a carbine, for the SMLE was another of the weapons intended for use by all arms from infantry to cavalry. At first SMLE had a rough introduction into service, but improvements and some modifications overcame these and in 1914 the SMLE was taken to France with the BEF; by then it had been redesignated the **Rifle No. 1 Mk III**.

The No. 1 Mk III is another of the candidates for the accolade 'best service rifle of the time'. It was a fully-stocked weapon with a snub-shaped fitting at the muzzle to accommodate a long knife bayonet. The bolt action was of the turn-bolt variety and used rear locking lugs as opposed to the front-locking lugs of the Mauser system. In theory this meant that the Lee system was less safe than that of the Mauser, but in service it caused no problems at all, and the smooth action of the Lee-Enfield mechanism made the British rifle easy and extremely fast. The detachable box magazine in front of the trigger group held 10 rounds, which was twice the capacity of many of its contemporaries. There was also a cut-out device that held all the rounds in the magazine while single rounds were fed into the chamber by hand; this arrangement was supposed to retain the magazine rounds for use only when really needed. The main sights were of the ramp type and calibrated to well over 1,000 yards (914 m), and on the left-hand side of the rifle stock was a peculiar long-range sight that was used to provide really long-range area fire to cover an area; it was used only under careful control when volley fire would be employed.

The No. 1 Mk III rifle was often known as the SMLE (Short Magazine Lee-Enfield) and was one of the best service rifles of World War I. It could be fired at a rapid rate of over 15 shots a minute as the bolt action was easy to operate, and the magazine could be quickly loaded.

Australian troops move up into the line near Fricourt in October 1918, carrying the No. 1 Mk IIIs that their descendants were to carry throughout World War II; Australian production of this rifle did not end until 1955 at the Lithgow arsenal. Note the mixture of headgear worn.

The onset of winter in 1914 led to the appearance of an astonishing variety of improvised fur coats. In spite of all the vagaries of life in the trenches, some Scottish regiments retained the kilt until the end of the war.

Above: Two well-laden British soldiers are seen in action holding the south bank of the River Aisne during the battle of May 1918, in the aftermath of the series of German breakthroughs that started during March of that year. The rifle is a No. 1 Mk III.*

Below: A cosy scene indicates the Entente Cordiale that was in being in March 1918. The picture was taken well behind the lines, for the No. 1 Mk III lacks the usual wrappings that would have kept it clean in the dirt and mud of the trenches.*

While the No. 1 Mk III was an excellent service rifle, it was expensive and time-consuming to make, for virtually everything had to be machined or made by hand. Consequently when trench warfare set in and an ever increasing number of rifles was needed, some production short cuts were made, including the removal of the magazine cut-out and the long-range sights. The result was the **Rifle No. 1 Mk III***, and this may be regarded as the standard British rifle of World War I. It was produced in tens of thousands, not only in the United Kingdom but also in India and Australia (where it remained in production until 1955). It was a sturdy and sound rifle that was well able to withstand the rigours of trench fighting. All manner of devices were invented to increase its usefulness, these ranging from periscopic sights to grenade-launcher devices. In the hands of a fully-trained soldier it was capable of high rates of fire: a rate of 15 rounds per minute was accepted as the norm and trained soldiers could produce far more. At Mons in 1914 the German forces involved thought they were up against machine-guns at some stages. They were not; it was simply the massed rapid fire produced by the superbly-trained soldiers of the BEF using their No. 1 Mk IIIs to full advantage.

Specification

Rifle No. 1 Mk III*
Calibre: 7.7 mm (0.303 in)
Length: overall 1.133 m (44.6 in); barrel 0.64 m (25.2 in)
Weight: 3.93 kg (8.656 lb)
Muzzle velocity: 634 m (2,080 ft) per second
Magazine: 10-round box

Battle of the Frontiers

Having trusted to defensive tactics in 1870, and lost, the French were determined to attack at all costs in 1914. But the battles on the frontier were to prove that sheer bravery is not enough to defeat modern weapons.

A French Cuirassier regiment moves through a French town during the very early stages of the war leading up to the Battle of the Frontiers in August 1914. Note the breastplates and the incongruous helmets of an era that was soon to be swept away by the German machine-guns.

When the French army went to war in 1914 it gloried in its high morale, it considered itself to be superbly equipped, and it was at long last setting out to avenge the defeats and indignities suffered at German hands in the Franco-Prussian War of 1870. Finally it was setting out to regain the lost provinces of Alsace and Lorraine, ceded to the Germans in 1871, and as the marching infantry and the cavalry moved out of their depots they advanced immediately towards these two 'lost' territories with eager anticipation.

They were to be bitterly disappointed, for they were moving into what history was to call the Battle of the Frontiers. In fact there was not one battle but a whole string of them, all ending in French defeats. At the time the French army could do little to analyse why this should have happened, but in time the reasons became clear to all who chose to look for them.

In immediate terms the French were defeated because their military leaders did exactly what the German staff planners wanted them to: they advanced towards Alsace and Lorraine on the eastern sector of the Franco-German border, while the main German moves were being made away to the west in the form of the now-famous Schlieffen Plan. This entailed a massive move by the chief weight of the German army through Belgium, along the Channel Coast and down behind Paris to encounter the French army in the rear to pen it up against the borders. When the French army moved towards the two provinces it was thus doing exactly what the Germans hoped and by so doing considerably assisted the progress of the Schlieffen Plan. The French move was part of the much-vaunted 'Plan 17', but to discover why the French put this plan into effect one has to go back to 1870.

In 1870 the Prussian army defeated the French in such a manner that the French army was all but destroyed. In a series of battles which culminated in the French debacle at Sedan the French military establishment was laid low and the national ego dealt such a blow that it seemed it might never recover. But recover it did, and in the years after 1871 the French nation and economy entered one of its most prosperous periods, the army being re-established to its former position of national pride and position. Colonial wars enabled it to retrain and to regain confidence, but all the time the shadow of Sedan was still there and it was realized that war with Germany must return sooner or later. But how could this war be fought?

The answer in French eyes was to ignore military realities and assume a philosophy in which the only reaction to any tactical or strategic situation was to advance. The advance became the only manoeuvre that was considered suitable for the French army, and in time this philosophy of the offensive became not just a military reaction to everything but a virtual religion. There appeared writings in which words and phrases like 'morale', 'determination' and 'the will to victory' were liberally spattered, and in time this approach to warfare became the accepted French norm. No form of disagreement or deviation from the advance was allowed in any shape or form, and the French army drilled and equipped itself for the advance. If the army could will itself to win by advancing nothing could stand in its way, or so the philosophy went.

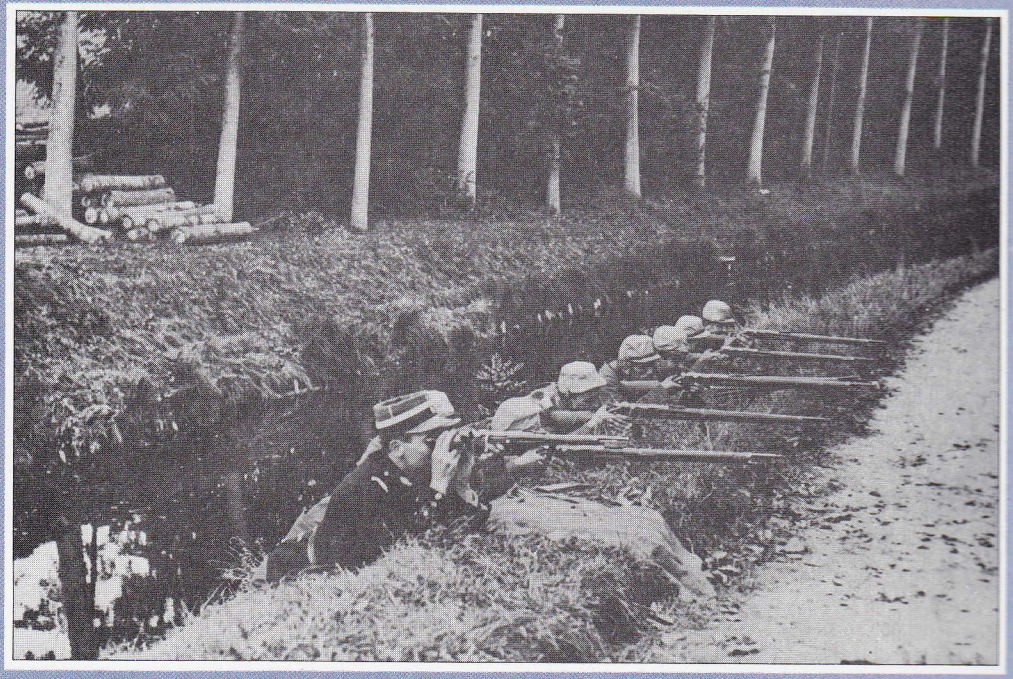
This philosophy went so far that anything that would hold up an advance was simply not acquired. Weapons like heavy artillery were not even considered. Instead the French gunners were provided with the famous '75', a light 75-mm (2.95-in) field gun capable of firing 15 rounds per minute. With this the army could cover any advance by simply blasting away any opposition, or so the philosophy again ran. For the infantry the bayonet was to be the attacking weapon. Rifles were simply things on to which bayonets could be placed. The cavalry would once again regain its place on the battlefield by advancing with the lance and sword. (The lessons of the Boer War in this context were ignored, as too were the even more indicative lessons of the American Civil War and even France's own experiences in 1870.)

As if this was not enough, the French army also did its cause no good by dabbling in politics, a prime example of which was the infamous Dreyfus Case which caused no end of rifts within the army establishment itself. In the short term this led to a rigid adherence to orthodoxy over and above the belief in the advance at all costs. The drill book and the instruction manual became bibles to the extent that on the rifle range it mattered not if the target was missed, for what really mattered was that the exact stance dictated by a chair-borne warrior in an office stated that only so much ammunition was to be carried into action, no deviation was tolerated despite the fact that it was clearly insufficient for more than a single skirmish.

Thus in August 1914 all was not well with the French army, but at the time this unpalatable fact was ignored. At last the French were advancing to Alsace and Lorraine. The bands played as the infantry in their bright uniforms marched east, accompanied by the cavalry some still in shiny breastplates as worn at Waterloo over a century before. The Germans simply waited.

A French patrol at an observation outpost in August 1914, complete with a dog no doubt intended for sniffing out hidden skirmishers. The rifles are Lebel mle 1886/93s, then the standard French service rifle but soon to be supplemented by Berthier rifles, both mle 1907s and mle 1916s.

Above: The French began the war in uniforms little changed from those of 1870. Les pantalons rouges, *the baggy red trousers worn since the 1830s, were soon exchanged for a less conspicuous kit. The* képi *itself was soon replaced by a steel helmet copied from the type issued to the Paris fire brigade.*



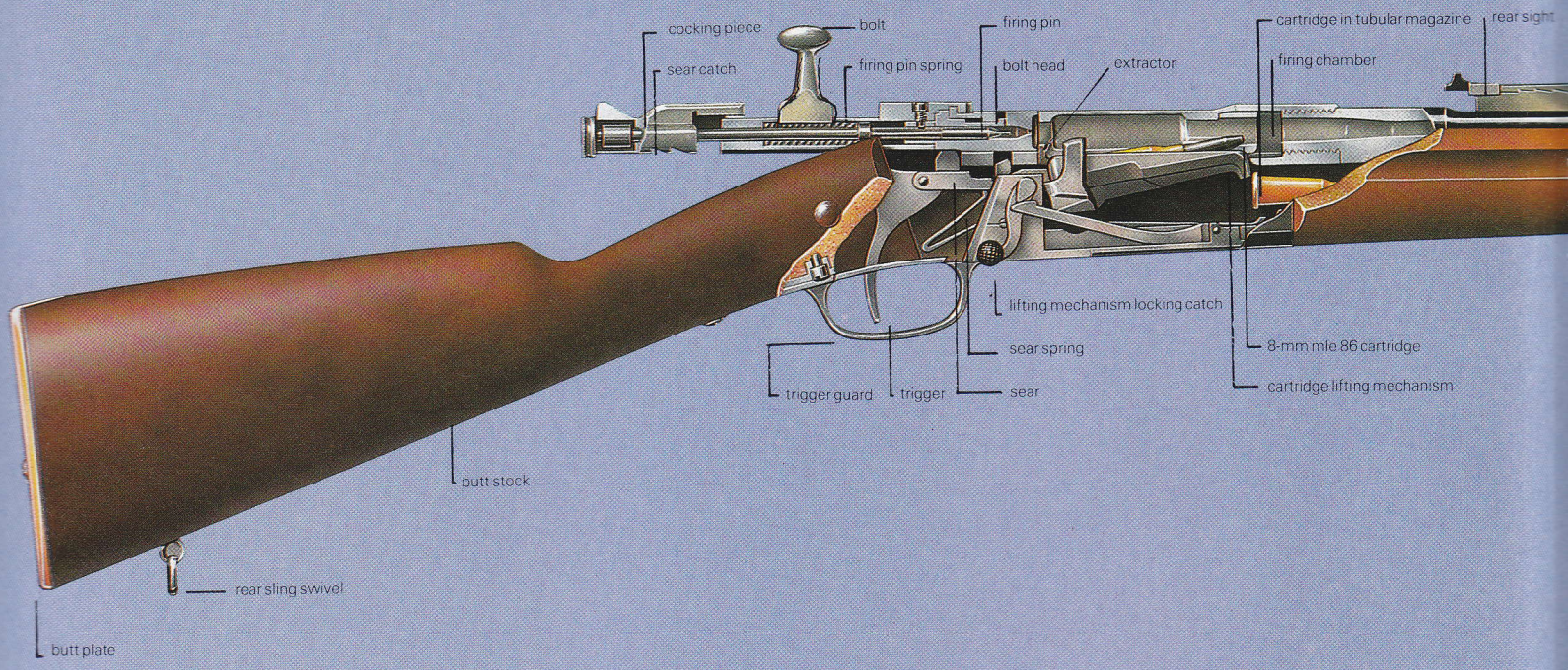
Above: A section of French infantry guards a canal bank for the camera in September 1914. The rifles are Lebels, and although the Battle of the Frontiers was by then over, the officer still retains his distinctive képi; *the soldiers have done their best to tone down the outline of theirs so as not to attract attention.*

Below: During the early part of the war tales of German atrocities were rife, to the extent that many hapless prisoners-of-war shared the harsh fate of this unfortunate, who is facing a French firing squad using Lebel rifles. This phase soon passed when trench warfare commenced, and PoWs could then hope for a better fate.

The Germans knew all about Plan 17 and had arranged their forces accordingly. They made few advances during the early stages but instead prepared a series of carefully emplaced defences at what they considered to be the right places, and they were not far wrong. The French army advanced on a broad front, and by 20 August the first tentative encounters were under way. The French soldiers usually had to march all the way to the borders, and by the time they got there many were tired. They had to carry much of their personal kit on their backs along with their heavy rifles and at least 100 rounds of ammunition. To this could be added the long and heavy bayonet, at least a part of the day's rations and the long greatcoat, usually worn with the front buttoned open at the bottom. Their enemies were already emplaced and ready, fresh and just as eager as the French to start the forthcoming battles.

The French were arranged in five armies from Lille in the north to Mulhouse in the south. Each army had at least two corps, and such was the confidence of the French that these corps usually advanced to the designated frontier positions side-by-side. They were in for a shock because, once the French scouting parties had discovered the main German positions, the massed French formations simply advanced towards them and there followed what can only be termed a series of massacres rather than battles as the French were cut down in their tracks.

Much of the damage was done as a result of infantry encounters in which rifles and machine-guns in carefully concealed German positions fired directly into the advancing French ranks. As the French advanced over open fields still covered with the year's harvest, the German machine-gunners could pick them off easily, for the brightly-coloured French uniforms stood out well against the background. The unfortunate French cavalry never got near enough to their destroyers to use their lances and sabres, for a single machine-gun was enough to reduce a battalion to a few uncomprehending men and terrified horses. The French foot soldiers fell in droves, often without firing a shot, still carrying their bayonet-laden rifles pointing to the east as they fell. The French artillery fared little better. The 75s were supposed to be used well forward with their direct fire supporting the all-important advance. What had not been foreseen was that although the 75s could fire 15 rounds per minute, ammunition had been allocated for a fire rate of only 2.75 rounds per minute. But the 75s did have their successes, for the fighting was not all one-sided. In some places impetuous German officers led their units forward into the fray only to be caught in the open as the French had been, and in some places the piles of German corpses were as high as those of the French.



Where the French were really to suffer was in their overall lack of heavy artillery. In a sharp foretaste of things to come, German artillery spotter aircraft often flew over the advancing French columns to direct the fire of the heavier batteries on to the unsuspecting French, who were killed even before they had joined the battle. It was all too much. The French colonial troops were among the first to break. They were always among the first to move into battle and they accordingly suffered the worst that the Germans could direct against them. The rout of the colonial troops started a general retreat from the frontiers, but at the time this fact was lost in the mayhem of the advance of the mass of the German army through Belgium and across the northern French plains. The Schlieffen Plan was grinding its way towards Paris and the nation seemed to be in great danger. But the Battle of the Marne lay ahead, and with it the failure of the German plans that led to four years of trench warfare.

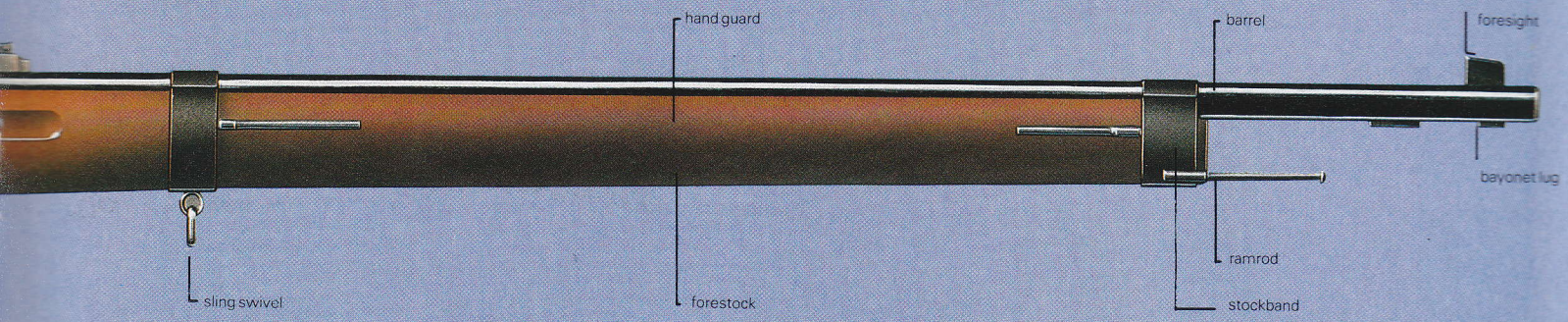
The Battle of the Frontiers is now generally seen as a prelude of what was to come after 1914, but at the time it was a disaster for the French. Their long-held theories were seen to be of little worth and they had to revise their strategies and tactics drastically, to suit the 'new' conditions. It also cost them the cream of their armies. The men who fell in the Battle of the Frontiers were the best that the French had. To this day the memorial plaque in the Officer Training College at St Cyr bears the title for the dead of the first year of the war as 'The Class of 1914'. Those officers could never be replaced, and with them perished tens of thousands of the best regular troops that the French army had trained. From then on the war was to be fought with a largely conscript force used en masse in such a way that the casualties of the Battle of the Frontiers were later to be regarded as nothing unusual.

Below: Looking almost like a scene from the Napoleonic Wars, this column of French cavalry moves up to the Battle of the Frontiers in August 1914. These soldiers are among the best-trained of all the French units, but their tactics were of no use against magazine-loading rifles and machine-guns.

Above: The French often used their colonial regiments as shock troops. This squad from the 5ème Tirailleurs Algériens on parade at Aix has Lebel rifles, at a time when many colonial troops were issued with rifles dating back to 1874 to keep modern weapons for the front line.

Right: German troops move up to the newly-established trenches in November 1914 and shoulder the weight of their 4.2-kg (9.26-lb) Gewehr 1898s. Each soldier carried at least 200 7.92-mm (0.312-in) cartridges plus all his personal kit, a greatcoat and at least a day's combat rations.

Lebel mle 1886



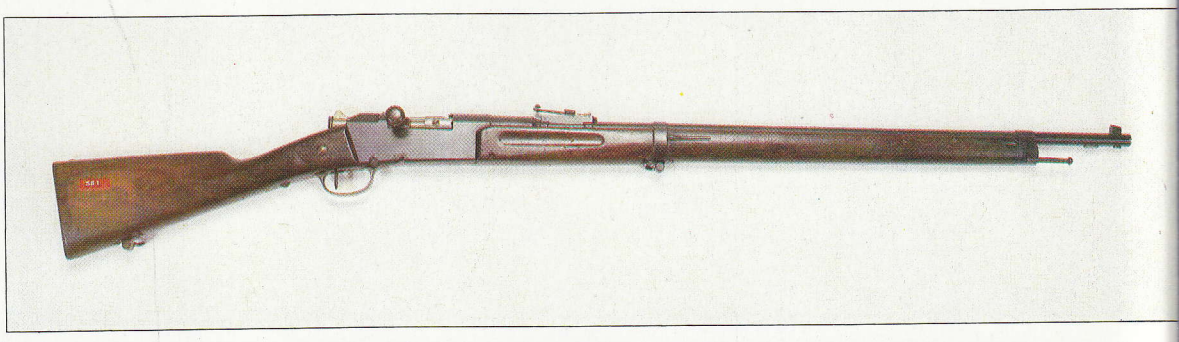
FRANCE

Fusil Lebel mle 1886

By 1886 the French army was in a position to introduce a new 'small' cartridge with a calibre of 8 mm (0.315 in) to fire the new completely smokeless propellant developed by Paul Vielle. With the new cartridge came a new rifle, the **Fusil mle 1886**, usually known as the **Lebel** after the name of the officer who led the commission that recommended the adoption of the new rifle and round.

The Lebel was for its time only a tentative improvement of the existing Gras mle 1874. The new rifle did indeed have the ability to fire the new 8-mm cartridge, but the bolt action of the Gras design was retained and, in place of the by-then acceptable box magazine, the Lebel used a tubular magazine in which the rounds were loaded nose-to-tail. This magazine was located under the fore-stock and contained eight rounds. It was still possible to load single rounds directly into the chamber and, as loading the tubular magazine was a somewhat slow process, the full loading was usually kept for use only when large amounts of fire were required.

The original mle 1886 underwent a major modification programme in 1893 and the designation was accordingly changed to **mle 1886/93**. Another revision came in 1898 when the ammunition was updated, but the designation remained unaltered.



Above: The long mle 1886/93 was basically an 1874 Gras rifle modernized by the use of an eight-round tubular magazine, and was one of the standard French rifles of World War I. It used a straight-action bolt system and fired an 8-mm (0.315-in) cartridge.

Left: Taken on manoeuvres in July 1914, this photograph gives an indication of the French attacking tactics of the Battle of the Frontiers. These massed rushes were supposed to carry all before them, but in the event the soldiers were mown down in heaps.

The original mle 1896 has one major claim to fame, for it was the first service rifle to fire smokeless propellant cartridges. For a short while the French army was thus ahead of all its contemporaries, but this advantage did not last long once the 'secrets' of the propellant became widely known. Within a few years all other major nations had converted to the new propellant and had also adopted the new 'small-calibre' type of cartridge, so the Lebel soon lost its early lead. In fact it assumed something of a back place in rifle development as a result of its anachronistic tubular magazine. One of the major disadvantages of such a magazine was the relatively long loading time that had already been mentioned; another was the safety aspect, for as the rounds lay nose-to-tail in the magazine there was always the chance that a sudden jolt would cause the nose of one round to hit the primer of the round in front with dire results. Thus there was a gradual move away from the Lebel towards the Berthier rifles, but in 1914 the Lebel remained in service in large numbers, and it was still standard issue to most front-line units. It served throughout World War I and was still in large-scale use in World War II.

The Lebel could mount a long cruciform bayonet, and was by all accounts a pleasant rifle to handle and aim. However, the loading was awkward and there was always the chance of a magazine explosion when it was least expected. Another drawback was the two-piece bolt which took a degree of maintenance and was prone to clogging with dirt and dust at the earliest opportunity. A special 5.5-mm (0.216-in) training version was produced in small numbers.

Specification

Fusil Lebel mle 1886/93
Calibre: 8 mm (0.315 in)
Length: overall 1.303 m (51.3 in); barrel 0.798 m (31.4 in)
Weight: 4.245 kg (9.35 lb)
Muzzle velocity: 725 m (2,379 ft) per second
Magazine: 8-round tubular

Above: A French Zouave is seen at Vincennes, 1917, standing guard with a mle 1886/93 fitted with the spike-like Epée-bajonette mle 1886. This converted the rifle into a pike for close combat, where it was to prove very effective, but it lacked the general usefulness of the blade-type bayonet.

French troops are shown in action a short distance from the Turkish lines at Gallipoli. The rifle in the foreground can be recognized as a mle 1886/93 by the inline bolt; if it was a Berthier the bolt handle would be turned down. The hardness of the ground has made trench-building impossible; hence the barricades.

FRANCE

French carbines

During World War I the carbine was a widely-used weapon with most armies other than those of the British and the Americans who never favoured the type. As a general rule these carbines were cut-down versions of the standard service rifles of the day and were originally intended for use by cavalry. However, between 1914 and 1918 the carbine was used by many more types of unit, usually in the second line, by signallers, drivers, military police and many others who required some form of weapon but not the long and awkward service rifle.

The carbines used by the French army can be taken as typical of the types in use elsewhere. While the French front-line troops were equipped with the normal service rifle, many other French soldiers carried carbines. At the top of this list inevitably came the cavalry, but after 1914 the French cavalry had little to do and many were used as infantry and were thus given the normal service rifles. Other second-line troops used a variety of weapon types. The oldest of them was the **Mousqueton Gras mle 1874**, like its longer relation a single-shot weapon with no magazine. Surprisingly the mle 1886 Lebel and its derivatives were not produced in carbine form (other than trials models) and most French carbines were based on the Berthier.

The first Berthier carbine was the **Mousqueton Berthier mle 1890** produced for the cavalry. The later **mle 1892** was for use by artillery units, and there was also a slightly different version for the Gendarmerie, a branch of the French armed forces. The mle 1892 was probably produced in greater numbers than the mle 1890, and was provided with such accessories such as a bayonet and cleaning rod. From the mle 1892 evolved the mle 1907 rifle. By 1914 the mle 1892 was in service with many arms other than the artillery for which it was originally intended, and the mles 1890 and 1892 met most of the carbine requirements of the French armed forces during World War I. In 1916 they were joined by the **mle 1916** (a carbine version of the Berthier mle 1916 rifle with its five-round box magazine), but relatively few of these were produced.

While carriage of these various carbines was certainly easier than that of the long service rifles, firing them was an unpleasant experience. All the carbine versions of standard rifles had two nasty drawbacks when fired: excessive flash combined with blast, and heavy recoil giving a pronounced 'kick' as the bullet left the muzzle. Both were produced by the fact that the cartridges were designed for barrels of conventional length. In the carbine some of the firing gases were still unexpended as the bullet left the muzzle, producing the flash and blast that in turn produced the recoil. The carbines were thus not much liked as weapons but were simply carried in lieu of the more awkward rifles. When they were used in action it was very much as a last resort and their performance was at best indifferent when compared with rifles of orthodox size and length.

Above: The Mousqueton Berthier 1890 et 1892 was the forerunner of the Berthier rifles, and is seen here with the Sabre-Bajonette mle 92/16 used during World War I. The magazine held only three rounds, but the carbine handled well, retaining, however, the violent recoil 'kick' of all carbines.

Specification

Mousqueton Berthier mle 1892
Calibre: 8 mm (0.315 in)
Length: overall 0.945 m (37.2 in); barrel 0.45 m (17.7 in)
Weight: 3.1 kg (6.83 lb)
Muzzle velocity: 634 m (2,080 ft) per second
Magazine: 3-round box

A French soldier in the Dardenelles during 1915 is seen here with a Berthier mle 1892 carbine fitted with a long knife bayonet. The use of such a carbine would indicate that he is not a foot soldier but possibly some form of specialist such as a signaller.

French cavalrymen carrying Berthier carbines pass elements of the 58th (London) Division during April 1918. At that stage of the war the cavalry were still held in reserve in case of the breakthrough that never came, for by then their place had been taken by the tank.

FRANCE

Fusil Berthier mle 1907

Soon after the Lebel had been adopted for service it was appreciated that the design had several drawbacks, the most important being the use of a tubular magazine. By the time this had been realized the Lebel was in large-scale production so there was little chance of any immediate change-over to a new design. Instead there began a slow and gradual process of introducing a new rifle design known generally as the **Berthier**. This began in 1890 with the introduction of a cavalry carbine and gradually as new requirements arose new Berthier weapons were introduced.

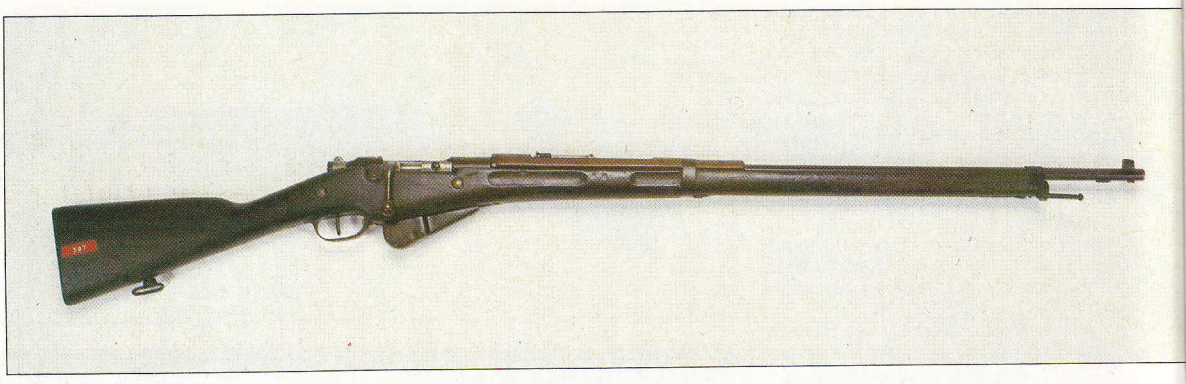
This culminated in 1907 with the adoption of a **Fusil mle 1907** for use in the various French colonies (Indo-China in particular). The Berthier rifle was typical of the Berthier series for it was a long, slender weapon that used a box magazine and a bolt action based on that already in use on the Lebel. While the change-over to the box magazine was a belated but good move, the Berthier magazine could hold only three rounds, a poor capacity in comparison with those of rifles already in use elsewhere, and therefore something of a disadvantage to the firer.

The mle 1907 was widely used by French troops serving in the colonies, and more were issued to colonial levies. Some were even issued to troops on the mainland of France, but in 1914 the Lebel was still the standard rifle. The situation was changed by 1915, for by then the French forces were expanding rapidly in numbers and weapons were in short supply. Accordingly the Berthier was rushed into mass production, the mle 1907 being used as the baseline model. Some changes had to be made to the finer design points (especially to the bolt and sights) and the resultant weapon became the **mle 1907/15**. It was soon in service alongside the Lebel, and was used by the French armed forces throughout World War I, and was still in widespread use in 1939.

The mle 1907/15 still retained the three-round box magazine, however, and this was clearly insufficient for the requirements of 1915. Accordingly the basic design was altered so that a five-round box could be used, and this variant was later placed into production as the **mle 1916**; it could be distinguished by the box magazine protruding from under the fore-stock, whereas on the mle 1907/15 the magazine was flush with the woodwork. The mle 1916 even had the facility to use a charging clip for loading the five rounds, a feature lacking on the mle 1907/15 in which each round had to be loaded individually.

The mle 1907/15 and mle 1916 soon became popular rifles. They certainly had a very attractive appearance for even under wartime production conditions the graceful shape of the long fore-stock was retained. In service the

Berthiers were rather long for the conditions of trench warfare, but they were easy to handle when firing and were usually preferred to the Lebel. The mle 1907/15 was manufactured in large quantities, and at one point was even placed in production by Remington in the United States, but only for French use as the US Army never used the type. The final development of the type occurred in 1934, when mle 1907/15 weapons were modified to fire the 7.5-mm (0.295-in) round developed for light machine-guns. The revised designation was **mle 1907/15 M34**, and the type had a five-round magazine.



Usually known as the Berthier rifle, the mle 1907 was a rifle version of the mle 1890 et 1892 carbine. This example is a mle 1916 modified from the original to take a five-round box magazine. This version was used by many armies after 1918, and was still in widespread use in 1939.

Specification
Fusil Berthier mle 1907/15
Calibre: 8 mm (0.315 in)
Length: overall 1.306 m (51.4 in); barrel 0.797 m (31.4 in)
Weight: 3.8 kg (8.38 lb)
Muzzle velocity: 725 m (2,379 ft) per second
Magazine: 3-round box

BELGIUM/GERMANY

Fusil FN-Mauser mle 1889

The Belgian **Fusil FN-Mauser mle 1889** is something of an international weapon, for although it was designed in Belgium the action was a direct copy of the Mauser bolt action. It was accepted as the standard Belgian service rifle in 1889 and although some of them came from the Belgian state arsenal, most were produced by an entirely new concern established specifically to manufacture the Model 1889, the Fabrique Nationale, now more commonly known as FN and one of the largest arms manufacturing establishments in the world.

As was then usual the mle 1889 was accompanied in production by a carbine variant, the **Carabine FN-Mauser mle 1889**, some of which were intended to be used in conjunction with a sword-like bayonet known as a 'Yatagan'; most of these were issued to fortress troops and some Gendarmerie units. In its rifle form the mle 1889 was a very well-made weapon with some unusual features. One was that over its entire length the barrel was encased in a metal tube. This was intended to ensure that the barrel would not come into contact with any of the woodwork, which was prone to warping and could thus impair accuracy. While this feature had some advantages, such as the ability to mount the sights on the tube and not on the barrel, it was rather expensive to manufacture and under some conditions rust could accumulate between the barrel and the tube. But this was a long-term condition and during World War I caused few problems.

When it entered service, the mle 1889 was set for a long life, for it remained in use until 1940, and even after that date the type was taken in German garrison use. Some examples were manufactured for export to Abyssinia and a few nations in South America, but generally speaking the mle 1889 was kept in production for the Belgian army only. When the Germans overran much of Belgium in 1914 the requirements of the remaining Belgian forces were met by switching production to Hopkins & Allen in the United States. For much of the war the small Belgian army was stationed on the far left of the Allied trench lines along the River Lys, when conditions were not suitable for large-scale troop movements, and accordingly the Belgian positions remained static for much of World War II.

The Belgian mle 1889 was a Mauser design built under licence, and had a distinctive muzzle surround and a pronounced curve to the front of the five-round magazine. It was produced at the FN plant at Herstal and remained the standard Belgian service rifle until World War II.

The mle 1889 may be distinguished from other Mauser weapons by the magazine, which had a distinctive bulge on its forward edge. This bulge accommodated the hinge of the magazine platform that fed the rounds upwards into the bolt mechanism under the control of a leaf spring. The box magazine held five rounds fed into the box from a charger clip, and unlike the practice in later Mauser magazines the rounds were held in a vertical stack. (The later versions used a 'staggered' arrangement.) Another recognition point is the barrel jacket, which extends to some way behind the muzzle. The usual Mauser cleaning rod was present and a long bayonet could be fitted.

Specification
Fusil FN-Mauser mle 1889
Calibre: 7.65 mm (0.301 in)
Length: overall 1.295 m (51.0 in); barrel 0.78 m (30.6 in)
Weight: 4.01 kg (8.8 lb)
Muzzle velocity: 610 m (2,001 ft) per second
Magazine: 5-round box

Belgian troops armed with mle 1889 Mauser rifles set up a roadblock outside Louvain in a vain attempt to arrest the onrush of the German armies through Belgium during August 1914.

Into the Unknown

Before the war it was assumed that the great increases in firepower produced by the magazine rifle and quick-fire artillery would make battles more bloody but no less decisive. But the new firepower simply drove the armies into the earth, and machine-guns kept them there.

When war broke out in 1914 there were few tacticians on either side who could envisage the manner in which the machine-gun was to dominate infantry tactics in the years to come. That with the better appreciation was the German side, for the Germans alone had taken the care to invest in numbers of these weapons adequate to equip their infantry units, and in 1914 the effect of these weapons was profound. A single machine-gun is sufficient to arrest the movement of an entire infantry or cavalry battalion at times, but in 1914 this simple fact was a novelty and the tacticians of the time could think of nothing other than getting behind some form of protection until a set-piece attack could be mounted. In practice this meant the digging of trenches, but it was to be four years before the infantry could get out of them.

In 1914 armies on all sides were prepared for a war with the usual manoeuvres and marching warfare that would bring the two sides to battle. Accordingly the infantry trained to march over long distances and when the time came for action the idea was for whole battalions to advance to positions where fire fights would dictate the eventual result. This era did not last long, coming to an abrupt halt with the Battle of the Frontiers for the French, and with Mons and Ypres for the small British Expeditionary Force (BEF). Away in the east the Russian steamroller was annihilated in the vast wheeling battles of Tannenberg and all the others, for on the Eastern Front the static conditions of trench warfare never became fully established and a form of mobile warfare prevailed right until 1917, when the Russians withdrew from the unequal contest.

Once the trench lines were set up on the Western Front, infantry tactics became moribund for some years. And when the 'Old Contemptibles' of the BEF had vanished in the holocaust of Loos in 1915, the greater part of the British army was made up of barely-trained conscripts led by junior officers who were only marginally better trained. The French too had lost their best soldiers in the early stages of the war and were content to base themselves on their trench lines for what were essentially local offensives. For much of the war these operations were confined to local trench raids at night and perhaps the odd company action against limited objectives.

In all these actions apart from the raids the infantry tactics were much the same. A prearranged artillery bombardment was directed against known enemy positions, and at a pre-set time the infantry clambered out of the trenches and walked towards the enemy lines. In the years since 1918 these simple tactics have come in for much criticism, but the fact remains that given the state of manning and training in most armies the protagonists had little alternative. The standard of training and understanding of military basics was such that conscripts had to be used en masse, with little finesse in the way of advancing with mutual fire support between units or the use of flanking support moves. It was quite simply a case of massing enough men, attempting to destroy the enemy's positions and weapons with artillery, and then advancing in a straight line towards the enemy trenches where (if they arrived) the soldiers could engage in hand-to-hand fighting.

The first shot of this ciné film sequence taken during the Battle of the Somme in 1916 shows an officer leading a section of British infantry out of a trench. The officer wears jodphurs and carries a cane, making him an obvious target; later in the war they carried rifles and wore battledress.

Above: The unfortunate man on the right appears to have become one of the many dead, and did not even make it out of the start trench.

Below: His comrades are already on their way through the machine-gun fire, but as so often in 1916 few will actually reach their objective across no-man's land.

If the German machine-guns were not enough of an obstacle in no-man's land, the barbed wire could always be relied on to slow down a rushed attack to a slow walk. The standing infantry made ideal targets for enemy machine-gunners and riflemen, in their relatively safe trenches.

The tactics were for many years as crude as that, and as the world now knows in many cases the unfortunate infantry never even made it beyond the middle of the 'no-man's land' that divided the trench lines. Some of the enemy's machine-guns always managed to survive the artillery fire and pop out of the dugouts and bunkers in time to halt the advancing infantry.

However, for much of 1915 the German army was on the defensive while tacticians pondered on how to break the trench-warfare deadlock. In 1916 they came up with the dreadful philosophy of the 'killing ground', which they put into action at Verdun. This philosophy was meant to make the French army defend an area chosen by the Germans in such a manner that the German war machine would simply grind away the strength of its foe. But in order to make the French defend Verdun the Germans had first to attack and this they did in a more sophisticated manner. Instead of the extended lines of walking infantry, the Germans attacked with small sections of infantry supported by light machine-guns, moving forward not in an extended line but in short unco-ordinated rushes that diverted the defenders and dispersed defensive fire. The attack was still preceded by the usual massive artillery action that tore up the ground, but in the main this favoured the attackers. Although the Verdun battles were eventually lost by the Germans, in that their original objectives were not achieved, the novel tactics were noted for future use.

They were certainly not adopted by the British in 1916 when the Somme offensives went ahead in exactly the same manner as those of 1915. Lines of infantry rose out of their trenches at the appointed time and walked forward in extended lines. The only changes from 1915 was that the preliminary artillery barrage was much heavier and that more use was made of chemical warfare. In the latter stages of the offensive the tank appeared on the scene, but only in small numbers that did not make a material contribution.

The tank was nevertheless to have the greatest effect on infantry tactics of the time, but 1918 started with the Germans once more refining their Verdun tactics for use during the last major German offensives, arranged to crush the Allies before the Americans could arrive on the scene in vast numbers. In a series of set-piece battles the German infantry were used in small squads that moved forward, taking advantage of cover and ground where possible, to sweep past rather than into the Allied trenches to create mayhem in the rear areas. These new tactics worked wonderfully. Allied formations, conditioned by years of static trench warfare, were suddenly faced with swarms of small infantry squads moving through their lines while gas, artillery and even tanks kept them occupied and seeking what cover there might be to hand. These German tactics created great holes in the Allied lines, and the Germans were halted only when final reserves had been brought up from the rear areas. But it had been a near-run thing, especially for the British forces in front of Amiens.

Eventually the German offensive petered out. By the middle of the year the Allies were ready for their final offensive, and this time it was to be different. The years since 1914 had not all been spent in carrying out the same mistakes over and over again, and with the advent of the tank new tactics could be used. The early conscript armies had grown not only in numbers but in skills, and the long series of attacks that finally defeated the Germans on their own terms were made not by the old set-piece attacks but by tactics based on a high degree of inter-arm co-operation. No longer did the artillery simply blast a way through the trench lines: instead it provided a lifting barrage of defensive fire as the infantry and tank advanced in mutual support. Overhead the new Royal Air Force, corrected artillery fire and flew ground-attack sorties. Some units were even supplied at times from the air using parachuted stores and ammunition. No one arm moved forward by itself. It was a balanced and co-operative effort using tactics that were to see their full fruition in World War II. No longer was the foot soldier simply a rifle-carrier. Instead he moved forward with fire support from tanks and artillery to occupy territory and winkle out the enemy from his positions. It was a very long way from the early days of August 1914.

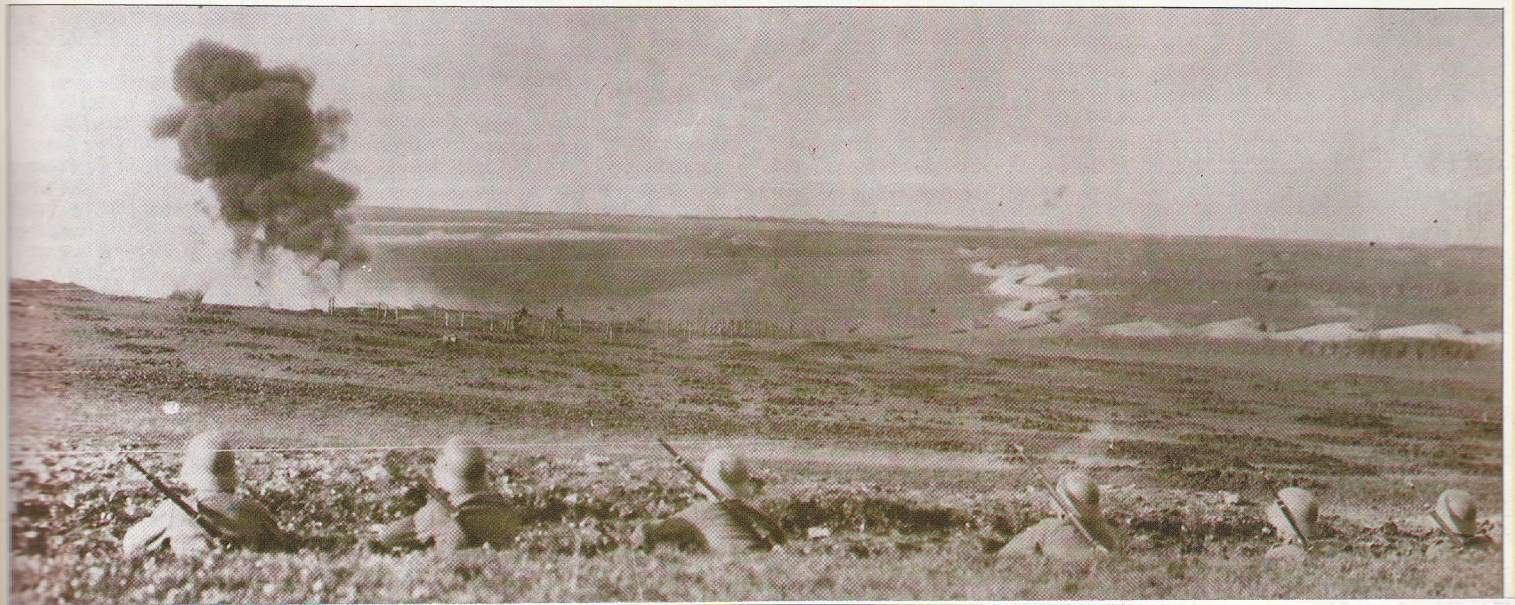
This is the type of terrain over which the infantry of both sides had to advance during the many battles of the war. The open, pock-marked landscape was dominated by artillery and the machine-gun, and men could only survive underground or behind protection such as that supplied by tank armour.

The Second Naval Brigade practise an attack on Imbros, June 1915. The dense rush of men provided an excellent target for those Turks who had survived the British barrage. On the Western Front fluid small-unit tactics were gradually introduced, and contributed greatly to the German breakthrough in March 1918.

Above: After its disastrous performance in the Balkan wars of 1912-3, the Turkish army was once again written off as an effective force. But to the surprise of their enemies, the Turks fought with dogged tenacity when the British and French attacked at Gallipoli. This Turk carries a Mauser rifle and a packed cartridge belt. The cloth hat shaped like a solar topee but without a peak replaced the traditional fez in 1908.

Above: The tactics that were to be used by the German stormtroopers of March 1918 were formulated during 1917 when small squads of infantry attacked using hand grenades as their main weapons. This picture was taken at the German training area at Sedan. Note how rifles were carried slung.

Below: Taken from the German trench lines, this photograph shows troops advancing across open terrain. The troops in the foreground still have their rifles slung, perhaps indicating that they are about to move forward to a support position that cannot be seen from the camera position used.



RUSSIA

Mosin-Nagant Model 1891

By the late 1880s the Russian army was in the process of converting its massive forces away from the use of the obsolete Berdan rifles. The army carried out a series of investigations, in the course of which it was attracted by a number of rifles produced by the Belgian Nagant brothers, but it also had on its doorstep a design produced by a tsarist officer known as Sergei Mosin. The planners decided to amalgamate the best features of the two designs and the result was the **Mosin-Nagant** rifle which was introduced into service in 1891; its full Russian title was **Russkaya 3-lineinaye vintovka obrazets 1891g** (Russian 3-line rifle model 1891).

The term '3-line' in the designation denotes that the calibre was gauged in an old Russian linear measurement known as a line, equal to 2.54-mm (0.1 in). This was later changed in 1908 when a new cartridge was introduced and the calibre became 7.62 mm (0.3 in). The original sights were calibrated in the equally old arshins (1 arshin = 0.71 m = 27.95 in), but these too were changed to metres after 1908. Overall the Model 1891 was a sound and rugged rifle design but it did have a few unusual features. One was found in the five-cartridge magazine, for with the system employed the top cartridge was always kept free of magazine spring pressure for the actual bolt-loading process, which had the advantage that feeding jams were less frequent than they might otherwise have been. But this was balanced by the introduction of some complexity in the mechanism. The two-piece bolt was also generally judged to be more complicated than was really necessary, though it gave little enough trouble in use. One other unusual feature was that the rifle was issued with a long bayonet with a screwdriver point that could be used to dismantle parts of the rifle. This bayonet was of the socket type, and during World War 1 it was a virtual fixture on the rifle at all times.

Overall the Model 1891 was a rugged weapon that could take hard knocks and was generally undemanding of care and attention. A **Dragoon Rifle Model 1891** carbine version was produced for use by cavalry and the ubiquitous Russian mounted infantry, but this variant was only slightly shorter than the rifle and much longer than other carbines produced at the time; a genuine **Carbine Model 1910** variant was produced in 1910.

The main problem for the Russians was that they had selected a good service rifle, but there were never enough of them and production facilities were overstretched. Those that existed had to make the rifles virtually by hand as the concept of mass production was far from Russian thoughts before 1914. Consequently, when extra Russian army units were formed from the reserves in 1914 there were very often no rifles with which to arm them.

Above: The Russian army went to war in the Slavic uniforms adopted after 1877 and armed with the rugged Mosin-Nagant series of rifles. Lack of competent commanders rather than a shortage of modern equipment was to lead to the heavy defeats of 1914.

Above: These Russian troops are armed with Mosin-Nagant Model 1891 rifles, all with the long spike bayonets that were such a fixture that the sights were usually adjusted permanently to compensate for their weight. The bayonets used the ancient socket method of fixing.

Part of the Russian contingent is seen at Salonika in July 1916. This was the last year in which the Russian army could adequately sustain combat; the Herculean offensive launched by General Brusilov dealt a savage blow to Austria-Hungary but could not save the tottering Tsarist empire.

The Model 1891 played its part in the revolutions of 1917 and was again in action during the civil war that followed in 1918. Between the wars the Model 1891 was replaced in production by the shorter **Model 1891/30**, and it was with this that the Red Army was armed in World War II, though some Model 1891s survived after 1941.

Specification

Mosin-Nagant Model 1891
Calibre: 7.62 mm (0.3 in)
Length: overall 1.305 m (51.38 in); barrel 0.802 m (31.6 in)
Weight: 4.37 kg (9.62 lb)
Muzzle velocity: 810 m (2,657 ft) per second
Magazine: 5-round box

ITALY

Fucile modello 91

The Italian service rifle of World War I was the **Fucile modello 91**, and was of a type known as the **Mannlicher-Carcano**. This was developed at Turin Arsenal between 1890 and 1891 and was an overall amalgamation of a Mauser bolt action taken from the Belgian/German mle 1889, the box magazine arrangement of the Mannlicher system and a new bolt-sleeve safety device produced by one Salvatore Carcano. The Italians thought highly of the resultant weapon and adopted it in 1892; it remained the standard Italian service rifle until World War II.

Unfortunately no else seemed to share their enthusiasm, for the only sales made outside Italy before World War I were to Japan, and this batch was made to accommodate the Japanese 6.5-mm (0.256-in) round which differed in dimensions from that in Italian use. In service the modello 91s proved sound enough, but the amalgamation of diverse features in the bolt and magazine areas resulted in a design that was rather more complicated than it might have been, and in the field the modello 91 required considerable attention, especially in

This Mannlicher-Carcano carbine is the 6.5-mm (0.256-in) Moschetto modello 91 per cavalleria. As it was meant for use by cavalry troops it has a fixed folding bayonet and the magazine held six rounds, but many were used with other special troops such as gunners and signallers.

the colonial territories in Africa; in particular, the straight-pull bolt action was prone to jamming when dirty.

The modello 91 spawned a whole group of carbine types that were produced in variants for use by cavalry, special troops (including gunners and engineers) and others. While these carbines were handy and easy to carry they suffered from the usual shortcomings inherent on firing short-barrelled weapons, even though the cartridge used was less powerful than many others then in use elsewhere. Some of these carbines were provided with spiked bayonets; the modello 91 rifle used a knife-type bayonet.

As the modello 91 was used only by the Italians during World War I their service use was confined to the border campaigns against Austro-Hungarian troops, coming to a climax with the Battle of Caporetto in 1917. During this action the Italians lost heavily and the resultant withdrawals led to some British divisions being diverted from the Western Front in an attempt to stabilize matters. The outcome of Caporetto was not due entirely to the performance of the modello 91, which was much the same as that of many of its contemporaries, but even at the time it was generally accepted that the Italian 6.5-mm cartridge was rather underpowered and the bullet it fired generally lacked striking power. But these points were marginal, for the modello 91 handled and fired quite well. The small cartridge produced less recoil than was usual among other designs (though the carbine versions kicked as nastily as other types) and the general lack of protrusions and items that could catch on things made the modello 91 a good weapon to use when moving across rough country. But even now the overall impression left by the modello 91 is that it was a rather more complicated weapon than others of the time, and despite the Italians' understandable enthusiasm for a national product it was among the 'also rans' in the World War I rifle stakes.

Troops of the 35th Italian Division march through Salonika during August 1916, carrying their Mannlicher-Carcano modello 91 rifles at the trail. Known as the Fucile modello 91, this rifle was still in service in 1940. It differed from the normal Mannlicher rifles only in detail.

Specification
Fucile modello 91
Calibre: 6.5 mm (0.256 in)
Length: overall 1.285 m (50.6 in); barrel 0.78 m (30.7 in)
Weight: 3.8 kg (8.4 lb)
Muzzle veclocity: 630 m (2,067 ft) per second
Magazine: 6-round box

AUSTRIA-HUNGARY

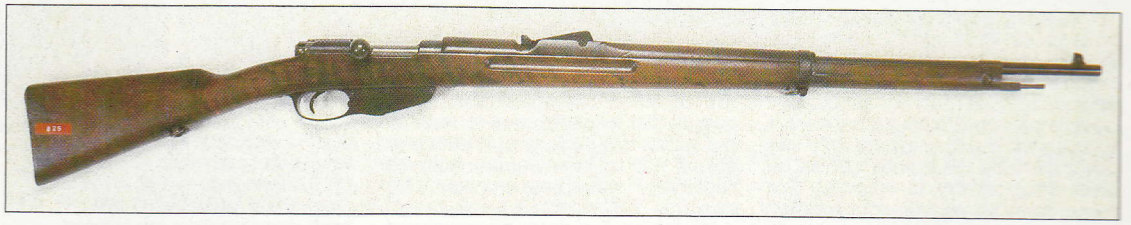
Mannlicher Modell 1895

By the early 1890s the Austro-Hungarian army had in service a number of types of rifle based on the bolt action designed by Ferdinand von Mannlicher. This employed a straight-pull bolt action of two-piece construction, and the first of the type was taken into service as early as 1884. There followed a number of models with various modifications, all of them firing the old black-powder propellant, and it was 1890 before the first 'smokeless' model appeared. It was not until 1895 that the design was finally 'frozen' and it was thus that the **Mannlicher Modell 1895**, also known as the **8-mm Repetier Gewehr Modell 1895** (8-mm repeating rifle model 1895) became the standard rifle of the Austro-Hungarian army.

The Modell 1895 was a sound and straightforward weapon that proved reliable in service. Like so many other rifles of the period the Modell 1895 was rather long but the straight-pull bolt action appears to have produced few problems. It fired the 8-mm (0.315-in) Modell 1890 round-nosed cartridge that was the first Austro-Hungarian round with smokeless propellant, and these were introduced into the five-round integral box magazine by using a cartridge clip and a charger guide on the receiver, in itself something of an innovation for the time.

It was the Modell 1895 that the Austro-Hungarian armies carried when they went to war in 1914. By then the rifles had been joined by a carbine variant known as the **Modell 1895 8-mm Repetier-Stutzen-Gewehr** and issued to troops such as engineers, drivers, signallers and gunners. For once the usual proliferation of carbine types did not occur in the Austro-Hungarian armies and the Stutzen became a familiar sight throughout Central Europe, during World War I and after it, for the Modell 1895 rifle and carbine became virtual fixtures for many armies. One of the first to adopt the Modell 1895 was Bulgaria. After 1918 the type was taken over by Italy in war reparations and the rifle became one of the standard Italian weapons. Others ended up in Greece and Yugoslavia, and of course once the Austro-Hungarian Empire had been split up after 1918 both Austria and Hungary retained their familiar weapons.

Both the Modell 1895 and the Stutzen are now collector's pieces but for a very long period they were the standard service weapons for much of Central Europe. They were sound if unspectacular weapons that provided good service for over half a century.



Above: The Mannlicher Modell 1895 was the standard service rifle of the Austro-Hungarian army and fired a 6.5-mm (0.256-in) cartridge. It was a sound and strong weapon with a five-round box magazine and a straight-pull bolt action. The projection under the muzzle is a cleaning rod.

Below: Austro-Hungarian troops outside Jaroslav carry their Mannlicher Modell 1895s. This rifle used a straight-pull bolt action and was known as the Repetier-Gewehr from its use of a five-round box magazine compared with earlier Mannlicher rifles, such as the Modell 1890.

Specification
Repetier-Gewehr Modell 1895
Calibre: 8 mm (0.315 in)
Length: overall 1.27 m (50 in); barrel 0.765 m (30.1 in)
Weight: 3.78 kg (8.3 lb)
Muzzle velocity: 619 m (2,031 ft) per second
Magazine: 5-round box

Recruited from a bewildering variety of nationalities, the Austro-Hungarian army proved to be a deceptively fragile instrument. As the war dragged on the Empire was forced to rely on the sort of hapless conscripts epitomized by the Good Soldier Švějk.

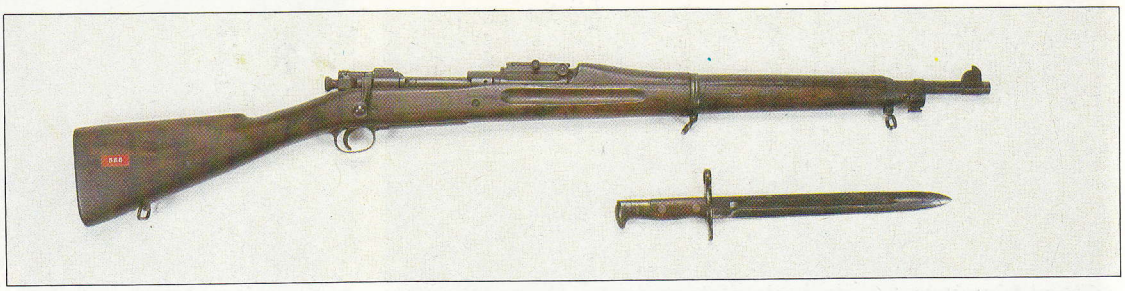
USA

Model 1903 Springfield

At the turn of the century the US Army was equipped with a rifle known as the Krag-Jorgensen which had been adopted in 1892. It was not long before the Americans realized that in the rapid developments of the late 1800s the Krag-Jorgensen left a lot to be desired and accordingly decided to adopt a better rifle. They cast around for ideas and were soon impressed sufficiently with the basic Mauser system to negotiate a licence to manufacture Mauser-based rifles in the USA.

The Mauser system was modified to produce a rifle built around a new American cartridge known as the Cartridge, Ball, Caliber .30 in M1903. This had a blunt nose but when the Germans introduced their 'spitzer' sharp-nosed bullet with better all-round performance the Americans were quick to follow suit and the rifle was accordingly modified to what was to be its classic form. In fact the rifle was ready in 1903, and was first manufactured at the Springfield Arsenal in Illinois, whence it took its generally-accepted name of the **Springfield** rifle. In appearance it was obviously a Mauser but the length was something new.

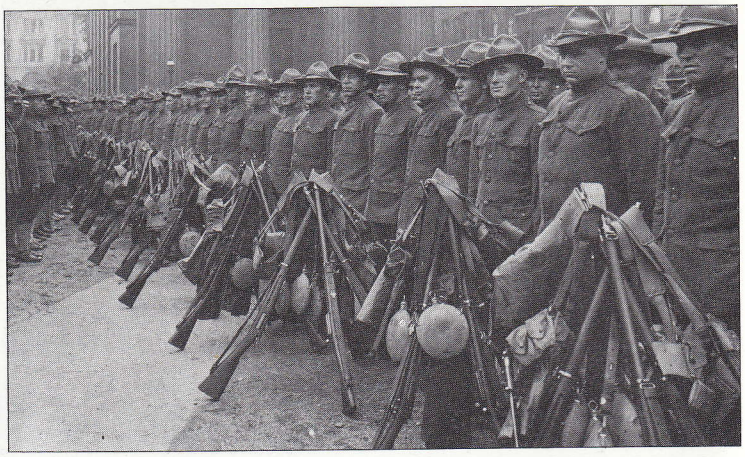
The new rifle was officially the **Magazine Rifle, Caliber .30, Model of 1903**, but this was usually abbreviated to **Model 1903** or simply **M1903**. It differed from most of its contemporares by being an interim length between a full-length rifle and a carbine, for it was intended to be the service rifle for all arms from cavalry to infantry. This compromise between lengths resulted in an extremely attractive and well-balanced rifle that was and still is a joy to handle. The bolt action was of the turn-down design with a well-placed bolt handle that was easy to operate rapidly when required; the overall fine standard of finish and detail design made the weapon extremely accurate, and the M1903 and its later versions are still much prized as target rifles. The original Model 1903 was the rifle



Above: The American M1903 Springfield was a Mauser-based rifle first introduced in 1903 and still in service during the Korean War. It was an excellent weapon and this is the original version, shown with a bayonet from the earlier Krag-Jorgensen Model 1896 service rifle.

the US Army took to France in 1917 but it was soon overtaken on the production lines by later variants including the **M1903 Mk 1**. This was basically a model 1903 adapted to accommodate the ill-fated Pedersen Device, a gadget that was supposed to turn the bolt action rifle into a form of automatic assault rifle by removing the bolt and replacing it with a new receiver firing special 7.62-mm (0.3-in) pistol ammunition fed from an overhead magazine; the rounds were fired using the normal rifle barrel. Although this device was issued, it was produced too late for widespread issue and was held in reserve for the expected offensives of 1919. After the war it was withdrawn from use altogether, the Mk 1 rifles being converted back to normal Model 1903 standards.

After 1918 the Model 1903 was further modified into various forms, usually with a view to easier production, and it was still in US Army service as a sniper rifle as late as the Korean War. By any standards it is still regarded as one of the best service rifles of its period, and quite apart from its continuing use as a target rifle, the type is now retained as a collector's item.



The first contingent of American troops that arrived in England in 1917 are seen here with M1903 Springfields piled. They are probably men from the famous 'Rainbow Division' formed from all the states of the Union and the first to be sent to Europe, where their fresh numbers would have ensured an eventual Allied victory.

Specification

M1903
Calibre: 7.62 mm (0.3 in)
Length: overall 1.097 m (43.2 in); barrel 0.61 m (24 in)
Weight: 3.94 kg (8.69 lb)
Muzzle velocity: 853 m (2,800 ft) per second
Magazine: 5-round integral box

USA

Winchester Model 1895

It may seem rather odd to have a rifle more usually regarded as being part of the plains warfare of the American West included in a study of the rifles of World War I, but the fact remains that the **Winchester Model 1895** was for one nation an important part of its World War I inventory. That nation was Russia, which entered the war with a will in 1914 only to suffer a series of catastrophic defeats of which the Battle of Tannenburg was but one. The basic problem for the Russian military planners was that although they had almost bottomless reserves of men they lacked the industrial base to equip them. The Russian economy before 1914 was indeed getting itself on an industrial footing, but it was as yet insufficient to sustain wartime production. Matters got to the point where soldiers were sent into battle without rifles but were expected to obtain them from among the fallen. Things clearly could not continue for long like that.

The easy way out was to purchase weapons from abroad. The Americans duly obliged and in particular the Winchester Repeating Arms Company of New Haven, Connecticut, took the opportunity to use the assembly line for its well-known range of manually-loaded rifles that used the loading lever beneath the trigger. This was operated by the fingers that gripped the stock; a rapid downwards movement loaded a new round from the tubular magazine under the barrel. By World War I this type of rifle was militarily obsolescent but it suited the Russian requirement and accordingly a 'militarized' version was churned out especially for the Russian army.

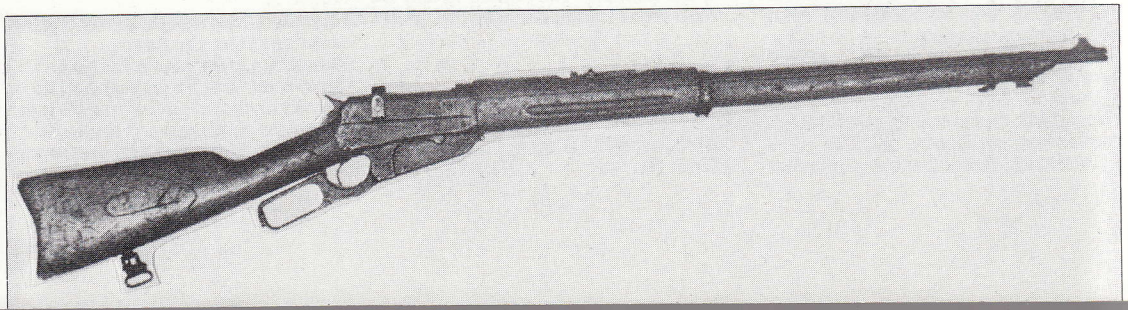
This was the Model 1895, which was chambered for the Russians 7.62-mm (0.3-in) cartridge and had sights calibrated in arshins, then the usual method of range measurement used in Russia (1 arshin = 0.71 m = 27.95 in). The resultant rifle could still be recognized as a descendant of the famous Winchester 75 of plains fame, but overall it was longer, heavier and more rugged. It needed to be, for all that made it to Russia (some were lost as a result of U-boat attacks) were sent straight to the front, and into the hands of rapidly-trained recruits who had little time for maintenance and cleaning. In all 293,816 were actually delivered to Russia and those that survived the rigours of the fighting against German and Austro-Hungarian armies later played their part in the revolutions of 1917 and in the civil war that followed. Moreover, some were captured by the Germans in World War II. It was noticed that some of these 'later' examples had their sights marked in metres, but when this was carried out is uncertain.

By any standard the appearance of the Winchester Model 1895 on the Battlefields of World War I was odd, but it happened nevertheless. Few records actually survive of how the Model 1895 fared in action but no doubt it gave a good account of itself. It was almost certainly the only lever-action rifle to be used during World War I and on that score alone it is worthy of mention.

Specification

Winchester Model 1895
Calibre: 7.62 mm (0.3 in)
Length: overall 1.175 m (46.25 in); barrel 0.71 m (28 in)
Weight: 4.2 kg (9.26 lb)
Muzzle velocity: not known
Magazine: 5-round tubular

One of the oddest rifles of World War I was the Winchester Model 1895 that still used the Winchester lever action made famous on the American Plains. They were ordered by Russia in 1914 to arm the expanding Tsarist armies. 293,816 were produced and sent to Russia, all in 7.62-mm (0.3-in) calibre.



Soviet Army Part 1

The Tank Division

Operating the world's largest armoured forces since the 1930s, the Soviet Union currently deploys over 51,000 tanks, including 7,700 T-72s, seen here in parade finish, and T-80s. Production of the T-72 continues at more than 2,500 a year, and the new generation of Soviet tanks has reduced NATO qualitative superiority to a dangerously slim margin.

According to Western intelligence sources, the Soviet army today has a total of 208 divisions. Of these 50 are tank, 136 motorized rifle, seven airborne and the remaining 15 artillery divisions. In addition there are a number of air assault, artillery, tank, anti-tank, air-defence and engineer brigades, as well as electronic warfare, NBC defence, signals and heavy transport regiments. The first of four parts of this study will deal with the overall command structure of the Soviet army and the tank division.

The commander-in-chief of the Soviet Ground Forces is a Deputy Minister of Defence, and he is responsible for technical matters, including research and development, non-operational training and overall supervision of administration; he does not have any direct control over the troops. In peace the major operational commands are the 16 military districts within the Soviet Union itself and the four groups of forces in Eastern Europe. The latter are the Group of Soviet Forces in Germany (GSFG), the Northern Group of Forces in Poland, the Central Group of Forces in Czechoslovakia and the Southern Group of Forces in Hungary. All of these are directly subordinate to the Ministry of Defence in Moscow, and the Group of Soviet Forces in Germany is the most powerful and issued with the latest equipment.

In time of war the military districts and groups of forces will be organized into fronts for military operations, the military districts within the Soviet Union functioning as territorial commands and serving as mobilization bases in addition to providing logistical support.

Soviet planners have divided the world into 13 Theatres of Military Operations (TVDs) which will function only in time of war. Of these five are continental, four naval and four intercontinental. These TVDs not only cover the actual area of operations but also the military districts that would support these operations. Depending on their mission, these TVDs will control a number of Fronts (between one and six) as well as air armies, airborne divisions (or air assault divisions as they are more commonly called today), naval units, long-range aviation, transport aircraft, strategic rocket forces and air-defence systems.

Each Front, which is roughly equivalent to a NATO corps, will comprise a number of armies plus other forces attached depending on the actual mission of the Front. There are two basic types of Soviet army, namely combined arms and tank. The former has a larger number of motorized rifle divisions, while the latter has a larger number of tank divisions. In each case the army has the full array of support units, including artillery, missile, air-defence, aviation, chemical, signal, intelligence, engineer and rear support units.

World War II experience convinced the Red Army of the importance of using infantry in close co-operation with tanks, and tank divisions include an infantry regiment in BMPs, seen here on winter exercises. The Soviets have recently begun to take an ominous interest in Arctic combat.

Tank division organization

A Soviet tank division has a divisional HQ plus HQ company (245 officers and men), three tank regiments, one motorized rifle regiment, one artillery regiment, one anti-aircraft regiment and single battalions of FROG (Free Rocket Over Ground) surface-to-surface rocket, multiple rocket launcher, reconnaissance, engineer, signals, motor transport, maintenance, chemical defence and medical troops. There is also an artillery command battery and a mobile field bakery; quite recently a helicopter squadron has been added to some divisions.

The iron fist of the tank division is made up of the three tank regiments which are normally equipped with T-64 or T-72 MBTs, although many tank divisions in the Soviet Union itself are equipped with the older T-54/T-55 or T-62. Each tank regiment has a total of 94 tanks, one at regimental HQ and 31 in each of the three tank battalions. Each tank battalion has a battalion HQ, an HQ and service platoon, and three tank companies. Recently each tank regiment has been strengthened by the addition of a battalion of 122-mm (4.8-in) 2S1 self-propelled howitzers.

The single motorized rifle regiment of the tank division is equipped with the full-tracked BMP mechanized infantry combat vehicle, which has excellent cross-country mobility and can easily keep up with the tanks as part of the combined-arms team. In the motorized rifle divisions there is only one tank regiment but three motorized rifle regiments, one with the tracked BMP and the other two with the BTR-60 or BTR-70 8×8 wheeled armoured personnel carrier. The latter have a much greater range of operation and a higher road speed than the BMP, but these are counterbalanced by inferior armour protection, firepower and cross-country mobility.

Roaring out of a blazing forest, this T-62 keeps its fully stabilized 115-mm gun trained on the target. The contemporary of the US M60 series, the T-62 has seen much action in the Middle East. Although being replaced in the Red Army by the T-72 and the T-80, it remains a formidable MBT and will continue to serve in both Tank and Motor Rifle Divisions for many years to come.

The single motorized rifle regiment of the tank division has a regimental HQ, three motorized rifle battalions, a single 122-mm 2S1 self-propelled howitzer battalion, anti-tank and anti-aircraft batteries, service and supply platoons, and single companies of reconnaissance, engineer, signals, chemical defence, motor transport, maintenance and medical troops. The motorized rifle regiment has a total complement of 2,225 officers and men.

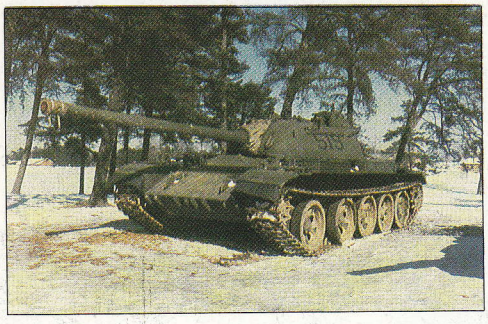
Each of the three motorized rifle battalions has a battalion HQ, three motorized rifle companies, a mortar battery with six 120-mm (4.72-in) towed mortars, an automatic grenade-launcher platoon with six of the new AGS-17 weapons, a repair workshop, a medical aid station and supply and communications platoons.

Each motorized rifle company has a company HQ with one BMP and three motorized rifle platoons, each of the latter having three BMPs. The motorized rifle regiment has a total of 108 BMPs.

The artillery regiment has an HQ battery, three battalions of artillery, a target-acquisition battery, motor transport, maintenance and medical companies, plus a supply and service platoon. Until the 1970s all artillery of the Soviet army, apart from specialized assault guns which have now almost disappeared from front line service, were towed. In recent years self-propelled weapons have been introduced in large numbers, and these have a number of significant advantages over towed weapons. They have a much greater cross-country speed, allowing them to keep up with the tanks and other armoured fighting vehicles they have to supply with fire support. Their crews are provided with protection from small arms fire, shell splinters and NBC attack. They can be brought into and taken out of action much more quickly to enable fire support to be provided rapidly after the vehicle comes to a halt.

Two of the self-propelled artillery battalions have the 122-mm 2S1 self-propelled howitzer, which is also known as the M1974 in the West, while the other battalion has the 152-mm (6-in) 2S3 which is often called the M1973. Each artillery battalion has a battalion HQ plus HQ platoon, a supply and maintenance platoon, and three howitzer batteries each with six weapons. The artillery battery has battery HQ plus HQ platoon and two firing platoons each with three weapons. The target-acquisition battery has a battery HQ, two surveillance radar sections, a meteorological survey section, a radar section and platoons for sound ranging, reconnaissance, communications and topographic survey.

If the divisional commander wants to put a massive amount of firepower onto target in the shortest possible time, he can call upon the services of the single multiple rocket launcher battalion. This has an HQ plus HQ platoon, service battery and three firing batteries each of which has six 122-mm 40-round BM-21 multiple rocket launchers, each mounted on the rear of a cross-country truck. This launcher can fire a full salvo of rockets in a few seconds and will then move to another position to be reloaded manually, which takes about 10 minutes. If the rocket launchers remained in the same position after they had fired their rockets they would soon be found by enemy location radars and engaged by artillery. The BM-21's rockets are normally fitted with HE warheads, but smoke or chemical can also be fitted.



The venerable T-54 and the similar T-55 still serve in some divisions. Owing to their eminently sensible policy of not scrapping serviceable vehicles, the Soviets do not have to risk expensive modern tanks fighting ill-armed guerrillas in Afghanistan, where T-54/55s are perfectly adequate. The T-54/55 typifies the older generation of Soviet tanks, crudely built and uncomfortable but carrying a big gun and produced in massive numbers, over 50,000 being built.

The division also has a single FROG battalion which has a battalion HQ plus HQ battery and two firing batteries each with four launchers for the FROG-7 surface-to-surface rocket, or the more recent and long-range SS-21 missile. These weapons are normally fitted with a tactical nuclear warhead, so it is assumed that permission for their launch must come from a higher level and not rest with the divisional commander. The battalion also has four missile resupply vehicles. In the case of the older FROG-7, each carries three missiles which are loaded onto the FROG-7 launcher with the aid of its onboard crane.

The surface-to-air missile regiment has a regimental HQ, target-acquisition and technical batteries, motor transport and maintenance companies and five SA-6 'Gainful' firing batteries. Each of the last comprises two missile-firing platoons each with two three-round SA-6 launchers. This is not the only air defence capability of the tank division, however, as aircraft and helicopters can be engaged by the roof-mounted 12.7-mm (0.5-in) heavy machine-guns of the tanks, the machine-guns fitted to the self-propelled artillery weapons and other armoured vehicles, and SA-7 'Grail' man-portable SAMs.

Each tank and motorized rifle regiment also has four SA-9 'Gaskin' surface-to-air missile systems on the BRDM-2 4×4 chassis, and also four of the highly effective ZSU-23-4 self-propelled anti-aircraft 23-mm gun systems. The threat of the SA-6 forces aircraft to operate at relatively low level, where they encounter the ZSU-23-4 and SA-7s.

Details of the reconnaissance, engineer, signals, motor transport, maintenance, chemical defence and medical battalions are given in the second part of this study, which covers the motorized rifle division, as their organization and equipment are identical in both types of division.